JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Introduction of High Efficiency Air-conditioning in Hotel
Reference number	VN005
Third-party entity (TPE)	TPE-VN-002 Japan Quality Assurance Organization (JQA)
Project participant contracting the TPE	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.
Date of completion of this report	24/03/2017

A.2 Conclusion of validation

Overall validation opinion	☒ Positive ☐ Negative

A.3. Overview of final validation conclusion

Only when all of the checkboxes are checked, overall validation opinion is positive.

Item	Validation requirements	No CAR or CL remaining
Project design document form	The TPE determines whether the PDD was completed using the latest version of the PDD forms appropriate to the type of project and drafted in line with the Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan and Monitoring Report.	☒
Project description	The description of the proposed JCM project in the PDD is accurate, complete, and provides comprehension of the proposed JCM project.	☒
Application of approved JCM methodology (ies)	The project is eligible for applying applied methodology and that the applied version is valid at the time of submission of the proposed JCM project for validation.	☒
Emission sources and calculation of emission reductions	All relevant GHG emission sources covered in the methodology are addressed for the purpose of calculating project emissions and reference emissions for the proposed JCM project.	☒
	The values for project specific parameters to be fixed *ex ante* listed in the Monitoring Plan Sheet are appropriate, if applicable.	☒
Environmental impact assessment	The project participants conducted an environmental impact assessment, if required by the Socialist Republic of Viet Nam, in line with Vietnamese procedures.	☒

Item	Validation requirements	No CAR or CL remaining
Local stakeholder consultation	The project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project.	☒
Monitoring	The description of the Monitoring Plan (Monitoring Plan Sheet and Monitoring Structure Sheet) is based on the approved methodology and/or Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan, and Monitoring Report. The monitoring points for measurement are appropriate, as well as whether the types of equipment to be installed are appropriate if necessary.	☒
Public inputs	All inputs on the PDD of the proposed JCM project submitted in line with the Project Cycle Procedure are taken into due account by the project participants.	☒
Modalities of communications	The corporate identity of all project participants and a focal point, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories are included in the MoC.	☒
	The MoC has been correctly completed and duly authorized.	☒
Avoidance of double registration	The proposed JCM project is not registered under other international climate mitigation mechanisms.	☒
Start of operation	The start of the operating date of the proposed JCM project does not predate January 1, 2013.	☒

Authorised signatory:	Mr. ☒	Ms. ☐
Last name: Yano	First name: Tadayuki	
Title: Senior Executive		
Specime [redacted]		Date: 24/03/2017

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Koichiro Tanabe	JQA	Team Leader	☒	Authorized	☒
Mr. ☐ Ms. ☒	Sachiko Hashizume	JQA	Team Member	☒	Authorized	☐
Mr. ☒ Ms. ☐	Tadashi Yoshida	External Individual	Internal Reviewer	☒	Authorized	☐
Mr. ☐ Ms. ☐	N/A	N/A	N/A	☐	N/A	☐

Please specify the following for each item.

* *Function: Indicate the role of the personnel in the validation activity such as team leader, team member, technical expert, or internal reviewer.*

* *Scheme competence: Check the boxes if the personnel have sufficient knowledge on the JCM.*

* *Technical competence: Indicate if the personnel have sufficient technical competence related to the project under validation.*

C. Means of validation, findings, and conclusion based on reporting requirements

C.1. Project design document form

<Means of validation>

Through a review of the draft PDD, it was checked and confirmed that the PDD was completed using the latest version of the PDD form (JCM_VN_F_PDD_ver02.0) appropriate to the type of project and drafted in line with JCM Guidelines for Developing PDD and MR (JCM_VN_GL_PDD_MR_ver02.0).

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team concluded that the PDD was complete using the valid form in line with the JCM Guidelines for Developing PDD and MR.

C.2. Project description

<**Means of validation**>

The proposed JCM project aims to improve electricity consumption by introducing the Japanese advanced high-efficiency inverter air conditioners for the hotel in Hanoi, Viet Nam. This project introduced a total of 17 high-efficiency inverter air conditioners with different COPs (one with COP 3.27, one with COP 3.29, two with COP 4.05, twelve with COP 4.09 and one with COP4.53). The key technology is a new type DC inverter scroll compressor. The intermediate pressure performance is drastically improved by using a release valve and optimizing orbiting scroll lifting force in the improved new compression mechanism. Therefore, intermediate pressure performance is largely improved for energy-saving. While non-inverter air conditioner with poor energy efficiency has the dominant market share in Vietnam, this project is intended to achieve energy saving with the introduction of high efficiency air-conditioning system to reduce GHG emissions. The expected emission reductions that would be achieved by the proposed JCM project in its first year of operation are estimated to be 935 tCO_2 annually. The estimated emission reductions of the period from 2016 through 2020 are calculated in the PDD.

The validation team conducted document review, and then conducted a one-day on-site inspection on 10/02/2017, including a follow-up interview. The location of the proposed JCM project was checked during the on-site inspection. The project description was also cross-checked through the physical inspection and interview with a representative of each of the entities below, who have been involved in the proposed JCM project as project participants (hereinafter referred to as “PPs”):

- Peace Real Estate Investment Company Limited
- NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

With respect to duration of the proposed JCM project, it was confirmed that the starting date of project operation is 06/10/2016, which is the date of the official grand opening of the hotel. Expected operational lifetime of the proposed JCM project is defined as 10 years, which is in compliance with legal useful life of the operational equipment under Japanese tax regulation. Contribution from Japan is also described in the PDD appropriately.

As a result, the team determined that the description of the proposed JCM project in the PDD was accurate, complete, and provided an understanding of the proposed JCM project.

<**Findings**>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

It is confirmed that the project description of the PDD is reasonable and appropriate.

C.3. Application of approved methodology(ies)

<Means of validation>

Selection of methodology(ies)

Through a review of the draft PDD and Monitoring Plan (Monitoring Plan Sheet and Monitoring Structure Sheet), it was confirmed that the following latest version of methodology was correctly quoted and applied in the proposed JCM project.

- JCM_VN_AM006_ver1.0

Eligibility criteria

The assessment results of the eligibility criteria in the approved methodology are summarized as below:

Criterion 1

"Air-conditioning system with inverter is newly installed or installed to replace existing non-inverter air conditioning system."

Through reviewing supporting documents and interviewing during the physical inspection, the project information of Criterion 1, described in the PDD, was checked and confirmed as below, with a satisfactory result:

- The air-conditioning system including high-efficiency inverter air conditioners inverters has been installed in the hotel, which started commercial operations from 6th October 2016.

Criterion 2

"Cooling capacity of project air conditioning system is more than or equal to 14kW."

Criterion 3

"COP of project air-conditioning system has a COP value higher than that of the value indicated in the table below."

COP for Reference Air Conditioning System ($COP_{RE,i}$)

Cooling Capacity [kW]	Reference COP
$14 \leq x < 28$	2.97
$28 \leq x < 42$	2.94
$42 \leq x < 56$	2.91
$56 \leq x$	2.56

Criterion 4

"Ozone Depletion Potential (ODP) of the refrigerant used for project air conditioning system is zero."

Through reviewing supporting documents and interviewing during the physical inspection, the project information of the above-mentioned Criterion 2, 3 and 4, described in the PDD, was checked and confirmed with a satisfactory result as below:

- The values related to Criteria 2,3, and 4 are summarized in the table below:

Model of the project air conditioning system	Nominal Cooling Capacity (kW)	Cooling COP	Refrigerant
RAS-26FSXN	73.0 -> OK	4.53 -> OK	R410A -> OK
RAS-32FSXN	90.0 -> OK	4.09 -> OK	R410A -> OK
RAS-34FSXN	95.0 -> OK	4.05 -> OK	R410A -> OK
RAS-38FSXN	109.0 -> OK	3.29 -> OK	R410A -> OK
RAS-44FSXN	125.0 -> OK	3.27 -> OK	R410A -> OK

- As for Refrigerant, it was confirmed that the ODP of R410A is zero.

Criterion 5

"Plans to prevent release of refrigerants into the atmosphere at the time of air conditioning system removal are prepared for both project air conditioning system and the existing air conditioning system replaced by the project. In the case of replacing existing air conditioning system by project air conditioning system, execution of the prevention plan is checked at the time of verification, e.g. re-use of the refrigerant, in order to confirm that refrigerant used for the existing air conditioning system removed by the project is not released to the air."

Through reviewing supporting documents and interviewing during the physical inspection, the project information of Criterion 5, described in the PDD, was checked and confirmed as below:

- To prevent release of refrigerants into the atmosphere due to the project, at the time of air-conditioning system removal, the project owner plans to collect refrigerants from project air-conditioning system removed by using refrigerant recovery machine, and ensure storage of collected refrigerants, meanwhile, project owner

will check by own check sheet and pictures of refrigerant recovery procedure.

- In addition, Letter of consent on not releasing refrigerant used for project chillers was prepared by participants from both sides.

On the other hand, the validation team could not confirm that the refrigerant recovery procedure has been prepared appropriately; thus CL01 was raised.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

(Issue raised as CL01)

As for Criterion 5 of the eligibility criteria, it was confirmed through the on-site assessment that PPs have a document titled "Construction method for air-conditioning and ventilation system of office, commercial and hotel project" to define its refrigerant recovery procedures. The validation team found that refrigerant recovery procedures for newly installation were described in the document, while those for removal of the equipment were not. Therefore, it is requested to revise the document and resubmit it, in order to clarify the procedures at the time of air-conditioning system removal.

(Summary of the response)

The PPs added procedures at the time of air-conditioning system removal to the document, and resubmitted it to the TPE.

(Assessment result of the responses by the PPs)

Through reviewing the operation manual for air-conditioning system, it was confirmed that a plan for prevention of refrigerant leak is appropriately included. Therefore, this item was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team reached the conclusion that the relevant information contained in the PDD is in compliance with the eligibility criterion listed in the approved methodology applied. The issue raised by the validation team was fully clarified.

C.4. Emission sources and calculation of emission reductions

<Means of validation>

It is confirmed through desk review that the emission sources and GHGs, which are described in the PDD, are in line with the evidential documents properly. It is also

confirmed through an on-site inspection that they are corroborated as below:

- As illustrated in the PDD, the proposed JCM project includes high-efficiency inverter air conditioners (both outdoor units and indoor units), and the corresponding monitoring points (17 of electricity measuring meters for the outdoor units, and one electricity measuring meters for the indoor units).
- It was observed that an in-house power generator (diesel fuel) had been installed in the building, for emergency use. The project participant excludes it from the project boundary, and the validation team considered it reasonable.

Since the applied methodology does not allow the PPs to choose any source or gas to be included, all emission sources and their associated GHGs relevant to the proposed JCM project meet the applied methodology. As for Monitoring Spreadsheet, the appropriate form, which is defined in the applied methodology and not altered, is used. It is cross-checked and concluded that the required fields of the spreadsheet are filled in appropriately.

Parameters to be fixed ex ante

As for parameters to be fixed ex ante, CL04 was raised as below.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

(Issue raised as CL04)

Through cross-check of the project-specific parameters fixed ex ante, it was not confirmed through the supporting documents whether EF_{elec} (CO_2 emission factor for the electricity consumed by the project and the reference equipment), which was identified in the Monitoring Plan Sheet (MPS), is appropriate or not. Therefore, CL04 was raised.

(Summary of the response by the PPs)

The MPS and the PDD was modified to the latest CO_2 emission factor for consumed electricity.

(Assessment result of the responses)

As a result, it is confirmed that CO_2 emission factor for consumed electricity of the proposed JCM project has been revised from 0.741tCO_2/MWh to 0.5657tCO_2/MWh in the revised MPS, in accordance with the latest grid emission factor, published by IGES. It is also confirmed that it quotes the latest available source of Year 2013, which has

been published by Ministry of Natural Resources and Environment, Viet Nam. The total emission reductions stated in the PDD has been also revised accordingly. Therefore, this item was closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team reached the conclusion through the validation that the selected emission sources and GHG types were justified for the JCM project. The validation team assessed values for project-specific parameters to be fixed ex ante in the MPS and intermediate processes to derive the values. As a result, those were considered reasonable in the context of the proposed JCM project. The issue raised by the team was fully clarified, which resulted in a revision of the PDD and the MPS.

C.5. Environmental impact assessment

<Means of validation>

It is confirmed through document review of legal requirement of environmental impact assessment in Viet Nam that the proposed JCM project is not required to conduct assessment of environmental impact since it is not applicable for the project type, namely housing and/or human settlement sector.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team concluded that the project design of the proposed JCM project was in accordance with the EIA regulation in Viet Nam.

C.6. Local stakeholder consultation

<Means of validation>

Through reviewing the PDD and the minutes of local stakeholder consultation (LSC) meeting, it was confirmed that a LSC was implemented for the following local stakeholders.

Through reviewing the PDD and meeting minutes of local stakeholder consultation (LSC), the following information was confirmed, with a satisfactory result:

(a) Comments been invited from local stakeholders that are relevant for the proposed project.

The relevant local stakeholders have been identified by the PPs, and a LSC meeting was held on 25/11/2016, with inviting the following local stakeholders respectively:

- [Direct stakeholders] Staff member of Peace Real Estate Investment Company Limited
- [Expert] Director General of School of heat engineering and refrigeration, Hanoi University of Science and Technology.

(b) The summary of the comments received as provided in the PDD is complete.

- The summary of the comments received has been described in the PDD. Through interview with the PPs, it is confirmed that those comments have been described in the PDD appropriately.

(c) The PPs have taken due account of all comments received and have described this process in the PDD.

JQA determines that the relevant local stakeholders have been identified appropriate and the information on the LSC meeting has been described in the PDD appropriately. As a result, it is concluded that no additional actions are required for the comments received.

<**Findings**>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The validation team concluded that the local stakeholder consultation of the proposed JCM project was adequate.

C.7. Monitoring

<**Means of validation**>

Through document review and interviews with the project participants, the following information was confirmed:

(a) Assessment of compliance of the monitoring plan with the approved methodology and/or PDD and Monitoring Guidelines

The parameters, which are required in the applied methodology, have been defined in Monitoring Plan Spreadsheet (MPS). As for the means of monitoring, JQA conducted interview with the Facility Manager of the proposed JCM project, to confirm the following information:

- $EC_{PJ,i,outdoor,p}$ (Electricity consumption of outdoor unit of project air conditioning system *i* during the period *p*) is determined through monitoring results of the electricity consumed by 17 units of outdoor units of air conditioning system in total. During the on-site inspection, it was confirmed that total 17 electricity measuring meters have been installed in conjunction with the corresponding 17 outdoor units respectively.
- $EC_{PJ,indoor,p}$ (total electricity consumption of indoor units of project air conditioning system *i* during the period *p*) is determined through monitoring results of the electricity consumed by indoor units. During the on-site inspection, it was confirmed that one electricity measuring meter has been installed to monitor total electricity consumption of indoor units in the air conditioning system.

(b) Assessment of the implementation of the plan

Through interview with the project participant, it was not confirmed whether the Monitoring Structure Sheet (MSS) is feasible or not. Therefore, CL02 was raised.

<**Findings**>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

(Issue raised as CL02)

The MSS, which is attached to the PDD, was checked through interview with the PP. According to the PP's explanation, Project Manager and Facility Manager have been assigned and functioned, whereas there is no future plan to appoint Project Dupty Manager since its role and the responsibility have been covered by Project Manager and Facility Manager. Therefore, it is requested to review the Monitoring Structure Sheet accordingly.

(Summary of the response by the PPs)

The PPs reviewed the monitoring structure of the proposed JCM project, and then the MSS was revised by removing the role of Project Deputy Manager from it.

(Assessment result of the responses)

It was confirmed that the revised MSS is still reasonable, and thus this check item was

closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team concluded that Monitoring Plan of the proposed JCM project complied with the requirements of the methodology and/or PDD and Monitoring Guidelines, and the project participants had ability to implement the described Monitoring Plan, including Monitoring Structure Sheet.

C.8. Modalities of Communication

<Means of validation>

Through document review, it is confirmed that the Modalities of Communication (MoC), dated 25/11/2016, have applied the applicable version of MoC form. JQA also conducted interviews with some of the signatories of the Modalities of Communication (MoC), and then identified the personnel and their employment status, including the specimen signatures. Therefore, JQA determine that the information of all project participants, including the focal point provided in the MoC and its correctness of authority, is appropriate.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team concluded that the MoC complied with all relevant forms and requirements.

C.9. Avoidance of double registration

<Means of validation>

It was confirmed through review of the relevant website (e.g. UNFCCC website, Markit Environmental Registry, etc.) that the proposed JCM project has not been registered under other international climate mitigation mechanisms. Also, the written confirmation of the avoidance of double registration was provided through the signed MoC, and was cross-checked through interview with the project participant, with a satisfactory result.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team concluded that the proposed JCM project was not registered under the other international climate mitigation mechanisms at the stage of validation.

C.10. Start of operation

<Means of validation>

Through interview with the project participant, it is confirmed that the starting date of project operation is identified as the date of the official grand opening of the hotel, dated 06/10/2016, which is not before 01/01/2013.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The validation team concludes that the start of the operating date of the proposed JCM project has been defined appropriately.

C.11. Other issues

<Means of validation>

No other issue was identified.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Not applicable.

D. Information on public inputs

D.1. Summary of public inputs

The PDD of the proposed JCM project, which was submitted in line with the Project Cycle Procedure, was made publicly available through the JCM website for public inputs. This call for public comments is open from 18 February 2017 to 19 March 2017 (24:00 GMT). The specific JCM website is as below:

- https://www.jcm.go.jp/vn-jp/information/198

D.2. Summary of how inputs received have been taken into account by the project participants

It was informed by Secretariat of the JC for the JCM between Viet Nam and Japan that public inputs were received on the proposed JCM project. Therefore, the validation team checked the authenticity and relevance of the information on the received input in line with paragraph 35 of the "Joint Crediting Mechanism Project Cycle Procedure". The submitter of the inputs provided the name and contact details of the individual as below:

- Name: Thomas Grammig
- Affiliated Organization: independent CDM expert, writing AMS-III.X and AMS-II.O for CDM
- E-mail: trgram@compuserve.com
- Country: Germany
- Website: http://www.thomas-grammig.com/

TPE is required to ensure that all public comments, which were submitted in line with the Project Cycle Procedure on the PDD of the proposed JCM project, are taken into due account by the PPs. Therefore, CL03 was raised to clarify the PPs' assessment results of the public comments received.

Through assessment of the comments, the PDD was not revised by the PPs considering that the nature of the inputs raised did not affect the specific project design of the proposed JCM project directly. The assessment results were summarized by the PPs as below:

Table: Received inputs and the assessment results by the PPs on the proposed JCM project (Vietnam) VN005 “Introduction of High Efficiency Air-conditioning in Hotel”

No.	Input	Assessment of input
1	The methodology VN_AM006 repeats similar erroneous assumptions in the emission reduction calculation than the JCM refrigeration and air-conditioner ("RAC") methodologies in Bangladesh and Indonesia. The baseline ought to include the leakage of refrigerant in the baseline case and the project emissions ought to include the leakage of refrigerant in the project case. Both in baseline and project case leakage is assumed zero.	The methodology VN_AM006 “Introduction of air conditioning system equipped with inverters” which is applied to VN005 “Introduction of High Efficiency Air-conditioning in Hotel” compares the emission from reference air conditioning systems and project air conditioning systems under the assumption that leakage of refrigerant from reference air conditioning systems and project air conditioning systems chiller during normal operation are the same. As a result, there is no leakage and it is not necessary to incorporate it in this methodology.
2	There seems to be a pattern among all JCM methodologies that a "monitoring plan to prevent the emission of refrigerants during replacement" is deemed sufficient. Typically including a declaration of intent what project participants want to do without means to verify whether they eventually act accordingly. The criterion 5 on page 2 of JCM_VN_F_PDD_ver01.0 is another version of similar criteria for refrigerant emissions.	Project participants prepared the consent on plan for not releasing refrigerant used for the project during replacement, which will lead to less leakage of refrigerant, and verifiers check whether the project participants eventually act according to their declaration as follows. In the letter of consent, project participants consent to the followings; 1) In order to prevent release of refrigerants into the atmosphere due to the project, a refrigerant is handled safely at the time of air conditioning system removal. 2) The project owner plans to recover refrigerant from the project air conditioning system removed and ensure storage of collected refrigerants by using refrigerant recovery machine. 3) Meanwhile the project owner will check by own check sheet and pictures of refrigerant recovery procedure.
3	However, refrigerant emissions do not only occur during the replacement of equipment but also during normal operation. Certainly air-conditioner manufacturers know quite well what the leakage is and furthermore loss of refrigerant during operation can easily be monitored by documenting how much refrigerant is being refilled.	This input is addressed by answers to input No.1.
4	It is worrying that a PDD does not include details about the project equipment and this one has exceptionally little information. Despite of this lack of transparency, it is possible to estimate refrigerant emissions during operations: assuming a refrigerant charge of 0.2 kg R410a / kW and twelve air-conditioners of 109 kW the total volume of refrigerant is 261 kg R410a. With GWP of 2088 and 5% leakage per year, the leakage in the project case amounts to 27.2 tCO2e. Because R410a consists of two HFC gases, it is relevant to underline that it is dealt with both by the Montreal Protocol and the Kyoto Protocol.	The methodology compares the emission from reference air conditioning systems and project air conditioning systems under the assumption that leakage of refrigerant from reference air conditioning systems and project air conditioning systems chiller during normal operation are the same. Therefore, there is no need to estimate refrigerant emissions, and the JCM are designed in such a way to avoid unnecessary information to be addressed in the PDD, while ensuring transparency of the project.
5	As I have commented previously on JCM projects and methodologies, I would like to point out that your baseline for refrigerant emissions is incomplete and fundamentally of lower environmental integrity than other RAC methodologies. Bangladesh chiller methodology BD_PM001 does not account for the impact of the re-use of refrigerant and does to account for leakage from the project chiller that uses HFC-245 as refrigerant. https://www.jcm.go.jp/bd-jp/methodologies/32/comment_file criterion 5	As for public inputs related Bangladesh methodology by Mr. Thomas, Joint Committee of the Joint Crediting Mechanism between Bangladesh and Japan Third Meeting considered it and concluded as follows; i. In regard to the case for re-use of refrigerant in replaced chillers, this methodology compares the emissions from reference chiller and project chiller under the assumption that re-use in reference cases and project case are the same. In addition, this methodology requests the project participants to commit the appropriate handling of the refrigerant in replaced chiller as stated in eligibility criteria 5. Thus, this methodology will not prolong the use of restricted refrigerants.

		The meeting report is publicly available in the following JCM website. https://www.jcm.go.jp/jc_decisions/750/JCM_BD_JC03_Mtg_Rep.pdf Since these comments are not related to proposed project VN005, there is no action needed.
6	Indonesia ID_AM003 and ID_AM004 do not account for the re-use of old refrigerant and do not account for normal leakage of refrigerant from the project chillers. https://www.jcm.go.jp/id-jp/projects/2/public_comment_file criterion 7	Regarding ID_AM003 and ID_AM004, Mr. Thomas has not provided public inputs for those methodologies. However, other public inputs received by methodology proponents were considered by Joint Committee of the Joint Crediting Mechanism between Indonesia and Japan Third Meeting considered it appropriately and approved two methodologies. The meeting report is publicly available in the following JCM website. https://www.jcm.go.jp/jc_decisions/376/JCM_ID_JC03_Mtg_Rep.pdf Since these comments are not related to proposed project VN005, there is no action needed. In addition, this input is addressed by answers to input No.1.
7	Final comment for the proposed project concerns the level of efficiency of the project equipment. The air-conditioners have an average COP around 4.09. Related JCM projects in Thailand, Bangladesh and Indonesia have efficiency levels in the present market on average between COP 5 to 6, for inverter type equipment. The proposed equipment in Vietnam compares somewhat unfavourably.	"Related JCM projects" mentioned by Mr. Thomas will be chiller projects. Since the COP is different from the equipment, objective of use and capacity, it is not necessary to compare COPs with it.
8	I don't want to abuse your attention, but I would like to point out that the interactions between different climate regimes can be taken into account. Regarding VN_AM006, as for BD_PM001, ID_AM002 and ID_AM003, there are interactions and overlapping effects with the Montreal Protocol, with the Californian emission trading because of its CFC destruction projects, and with the Kyoto Protocol CDM with its methodologies AM0060 and AMS-III.X. Perhaps these interactions can be encouraged or be prevented, reflecting what policy goals are important to JCM. And the encouragement or discouragement of the relations between VN_AM006 and Montreal Protocol projects, the Californian "Compliance Offset Protocol Ozone Depleting Substances", ACR "Use of Certified Reclaimed HFC Refrigerants and Advanced Refrigeration Systems" and CDM might be adequately defined at the methodology level because thereby a precedent is set for fruitful co-existence between various national and regional emissions trading systems. The case of refrigerants could be suitable for this also because the interactions can be defined in physical quantities (kg of CFC or HFC), rather than interactions via prices and markets. It might be of overarching policy concern to JCM, in light of the Paris Agreement Article 6.2, that these differences in accounting of refrigerant emissions should be aligned so as to not block the integration of JCM under the Paris Agreement.	Although there is no procedure to relate emission reductions among emission reduction schemes mentioned in the input No.8, all methodologies in the JCM is designed to calculate emission reductions in a conservative manner to achieve net emission reductions. Hence, in the light of the Paris Agreement 6.2, emission reductions in the JCM is suitable to be used for the achievement of NDCs.

The above-mentioned each of “assessment of input” was reviewed by the validation team against the related inputs respectively through considering the essence of the pointed out. As a result, it concludes that the PPs’ actions taken are reasonable and appropriate, in line with the Project Cycle Procedure.

E. List of interviewees and documents received

E.1. List of interviewees

- Nguyen Duy Chieu, Facility Manager, Peace Real Estate Investment Company Limited
- Do Xuan Chien, Facility Manager, Novotel Suite Hanoi
- Nguen van Dong, Manager, Kume Design Asia Co., Ltd.
- Mikiko Saito, Manager, NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc.

E.2. List of documents received

1. Project Design Document (draft) (JCM_VN_F_PDD_ver01.0(High Efficiency Air-conditioning)_1209.docx)
2. Monitoring Plan Sheet and Monitoring Structure Sheet (draft) (JCM_VN_AM006_ver01.0 - ver3.xlsx)
3. Modalities of communications statement (submitted with the draft PDD for publication)
4. Modalities of communications statement (a validated version for submission of request for registration)
5. JCM Approved Methodology ID_AM002 (JCM_VN_AM006_ver01.0.pdf)
6. Monitoring Plan Sheet and Monitoring Structure Sheet ID_AM002 (JCM_VN_AM006_ver01.0.xlsx)"
7. JCM Glossary of Terms (JCM_VN_Glossary_ver01.0.pdf)
8. JCM Guidelines for Developing Project Design Document and Monitoring Report (JCM_VN_GL_PDD_MR_ver02.0.pdf)
9. JCM Project Cycle Procedure (JCM_VN_PCP_ver03.0.pdf)
10. JCM Guidelines for Validation and Verification (JCM_VN_GL_VV_ver01.0.pdf)
11. JCM Modalities of Communication Statement Form (JCM_VN_F_MoC_ver02.0.pdf)
12. JCM Project Design Document Form (JCM_VN_F_PDD_ver02.0.pdf)
13. JCM Validation Report Form (JCM_VN_F_Val_Rep_ver01.0.docx)
14. Company profile of Peace Real Estate Investment Company Limited
15. Internal notice of grand opening of Novotel Suites Hanoi
16. List of legal useful life of operational equipment, published by Japanese National Tax Agency
17. Any evidence to demonstrate that the air-conditioning system with inverter was installed into the new hotel in 6th Oct 2016.
18. Specification of the air-conditioning system (HR-E591R), indicating the cooling

capacity and type of the refrigerant

19. Calculation spreadsheet for estimated values of total electricity consumption of indoor/outdoor units of project air conditioning system
20. CDM approved small scale methodology: AMS-I.A
21. Letter of consent on not releasing refrigerant used for the air-conditioning system
22. Installation view of the monitoring and measuring equipment
23. Legal requirement of environmental impact assessment in Vietnam
24. Meeting minutes of the local stakeholder consultation
25. Presentation materials for local stakeholder consultation
26. Specification of measuring equipment (Monitoring point No.1)
27. Participant list of local stakeholder consultation meeting
28. Specification of measuring equipment (Monitoring point No.2)
29. Meter Reading Record for Monitoring point No.1
30. Calculation spreadsheet for estimated values of total electricity consumption of indoor units of project air conditioning system
31. List of grid emission factor, issued by IGES (20170113_iges_er_sheet_gridef_JP.xlsx)
32. Calculation spreadsheet for estimated values of total electricity consumption of outdoor units of project air conditioning system
33. Construction method for air-conditioning and ventilation system of office, commercial and hotel project
34. Emeco's website (http://emeco.vn/about-us/about-us.aspx)
35. Project Design Document (final) (JCM_VN_F_PDD_ver01.0(High Efficiency Air-conditioning)_170316.docx)"
36. Monitoring Plan Sheet and Monitoring Structure Sheet (final) (JCM_VN_AM006_ver01.0_170323ver2.xlsx)

Annex Certificates or curricula vitae of TPE's validation team members, technical experts and internal technical reviewers

Please attach certificates or curricula vitae of TPE's validation team members, technical experts and internal technical reviewers.

Statement of competence

Name: Mr. Koichiro Tanabe

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	-
Verifier	2014/12/22
Team leader	2014/12/22

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2014/12/22
TA 1.2. Renewables	2014/12/22
TA 3.1. Energy demand	2014/12/22
TA 4.1. Cement and lime production	-
TA 4.6. Other manufacturing industries	2014/12/22
TA 5.1. Chemical industry	2014/12/22
TA 10.1. Fugitive emissions from oil and gas	2014/12/22
TA 13.1. Solid waste and wastewater	2014/12/22
TA 14.1. Afforestation and reforestation	-

Statement of competence

Name: Ms. Sachiko Hashizume

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	2015/11/20
Verifier	2015/11/20
Team leader	-

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2015/11/20
TA 1.2. Renewables	2015/11/20
TA 3.1. Energy demand	2015/11/20
TA 4.1. Cement and lime production	-
TA 4.6. Other manufacturing industries	-
TA 5.1. Chemical industry	-
TA 10.1. Fugitive emissions from oil and gas	-
TA 13.1. Solid waste and wastewater	2015/11/20
TA 14.1. Afforestation and reforestation	-

Statement of competence

Name: Dr. Tadashi Yoshida

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	2014/12/22
Verifier	2014/12/22
Team leader	2014/12/22

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2014/12/22
TA 1.2. Renewables	2014/12/22
TA 3.1. Energy demand	2014/12/22
TA 4.1. Cement and lime production	2014/12/22
TA 4.6. Other manufacturing industries	2014/12/22
TA 5.1. Chemical industry	2014/12/22
TA 10.1. Fugitive emissions from oil and gas	-
TA 13.1. Solid waste and wastewater	-
TA 14.1. Afforestation and reforestation	-